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09/966,038	09/28/2001	Erwin B. Bellers	US010583	4573

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EXAMINER

TRAN, TRANG U

ART UNIT PAPER NUMBER

2622

DATE MAILED: 11/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/966,038

Applicant(s)

BELLERS, ERWIN B.

Examiner

Trang U. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 12 September 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,2,4,6-9,11,13-16,18 and 20 is/are rejected.
- 7) ☒ Claim(s) 3, 5, 10, 12, 17 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Arguments***

1. Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 101***

2. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3. Claims 15-20 are rejected under 35 U.S.C. 101 because claims 15-20 are directed to the method of solving a purely mathematical problem without any limitation to a practical application accordance with the guidelines set forth in section 2106 of the MPEP.

Claims 15-20 recite a manipulation of basic mathematical constructs without Practical Application is not a patentable invention because "it is now commonplace that an application of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection." Diehr, 450 U.S. at 187, 209 USPQ at 8 (emphasis in original); accord Flook, 437 U.S. at 590, 198 USPQ at 197; Benson, 409 U.S. at 67, 175 USPQ at 675. Thus, "while a scientific truth, or the mathematical expression of it, is not a patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be." Diehr, 450 U.S. at 188, 209 USPQ at 8-9 (quoting Mackay, 306 U.S. at 94); see also Corning v. Burden, 56 U.S. (15 How.) 252, 268, 14 L.Ed. 683 (1854) ("It is for the discovery or invention of some practical method

or means of producing a beneficial result or effect, that a patent is granted..."). Claims 15-20 also seek to pre-empt the use of an equation.

***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 4, 7-9, 11, 14-16 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Page (US Patent No. 4,755,795).

In considering of claim 1, Page discloses all the claimed subject matter, note 1) the claimed an input receiving an analog video signal is met by the analog input signal (Fig. 1, col. 2, lines 41-53), 2) the claimed a sampling mechanism coupled to the input and sampling the analog video signal utilizing a variable sampling rate modulated for segments of the analog video signal based upon spatial frequencies within the image content contained within the analog video signal is met by the analog-to-digital converter 13, the bandwidth analyzer 22 which analyzes the frequency content of an input signal (Fig. 1, col. 1, lines 61-68 and col. 2, line 41 to col. 6, line 21), 3) the claimed an output of said sampling mechanism being coupled to a signal analysis unit to determine a highest spatial frequency within the image content is met by the bandwidth analyzer 22 which analyzes the frequency content of an input signal and the sampling rate was adjusted as a function of the highest frequency component of the input signal (Fig. 1, col. 1, lines 61-68 and col. 2, line 41 to col. 3, line 52), and 4) the

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claimed said variable sampling rate being selectable over a continuous range as a function of the highest spatial frequency within the image content the analyzer 23 and the controller 21 which selects the sampling rates for resampler 17 according to the input data stream bandwidth (Fig. 1, col. 1, lines 61-68 and col. 2, line 41 to col. 6, line 21).

In considering claim 2, the claimed wherein first sampling rate is employed for a first segment of the analog video signal containing content having a first highest spatial frequency and a second sampling rate greater than the first sampling rate employed segment of the analog video signal containing content having a second highest spatial frequency greater than the first highest spatial frequency is met by the analyzer 23 and the controller 21 which selects the sampling rates (high or low) for resampler 17 according to the input data stream bandwidth (Fig. 1, col. 1, lines 61-68 and col. 2, line 41 to col. 6, line 21).

In considering claim 4, Page discloses all the claimed subject matter, note 1) the claimed wherein the sampling mechanism further comprises: a single analog-to-digital converter receiving the analog video signal and sampling the analog video signal at a fixed rate is met by the analog-to-digital converter 13 (Fig. 1, col. 1, lines 61-68 and col. 2, line 41 to col. 6, line 21), 2) the claimed signal analysis unit analyzing samples from the converter to select sampling rate for and each segment of the analog video signal is met by the bandwidth analyzer 22 which analyzes the frequency content of an input signal and selects the sampling rate for resampler 17 (Fig. 1, col. 1, lines 61-68 and col. 2, line 41 to col. 6, line 21), and 3) the claimed a downsampling unit retaining samples

from the converter for each segment of the analog video signal based upon corresponding sampling rate selected by the signal analysis unit is met by the resampler 17 (Fig. 1, col. 1, lines 61-68 and col. 2, line 41 to col. 6, line 21).

In considering claim 7, the claimed wherein the sampling mechanism samples the analog video signal at a first rate and transmits samples for at least one segment of the analog video signal at second rate different than the first rate is met by the ADC 13 and resampler 17 (Fig. 1, col. 2, line 41 to col. 3, line 52).

Claim 8 is rejected for the same reason as discussed in claim 1 and further the claimed an output transmitting a digital video signal to a display, a storage system, or another device is met by the memory 15 (Fig. 1, col. 2, lines 42-60).

Claim 9 is rejected for the same reason as discussed in claim 2.

Claim 11 is rejected for the same reason as discussed in claim 4.

Claim 14 is rejected for the same reason as discussed in claim 7.

In considering claim 15, Page discloses all the claimed subject matter, note 1) the claimed an input receiving an analog video signal is met by the analog input signal (Fig. 1, col. 2, lines 41-53), and 2) the claimed a sampling the analog video signal utilizing variable sampling rate modulated for segments of the analog video signal based upon spatial frequencies within the image content contained within the analog video signal is met by the analog-to-digital converter 13, the bandwidth analyzer 22 which analyzes the frequency content of an input signal (Fig. 1, col. 1, lines 61-68 and col. 2, line 41 to col. 6, line 21), 3) the claimed determining a highest spatial frequency within the image content is met by the bandwidth analyzer 22 which analyzes the

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frequency content of an input signal and the sampling rate was adjusted as a function of the highest frequency component of the input signal (Fig. 1, col. 1, lines 61-68 and col. 2, line 41 to col. 3, line 52), and 4) the claimed selecting the variable sampling rate over a continuous range as a function of a highest spatial frequency within the image content is met by the analyzer 23 and the controller 21 which selects the sampling rates for resampler 17 according to the input data stream bandwidth (Fig. 1, col. 1, lines 61-68 and col. 2, line 41 to col. 6, line 21).

Claim 16 is rejected for the same reason as discussed in claim 2.

Claim 18 is rejected for the same reason as discussed in claim 4.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 6, 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Page (US Patent No. 4,755,795).

In considering claim 6, page disclose all the limitations of the instant invention as discussed in claims 1 and 2, except for providing the claimed wherein the rate for each segment of the analog video signal sampling is at least twice a highest spatial frequency within content contained by the corresponding segment of the analog video signal. The capability of selecting the rate for each segment of the analog video signal sampling is at least twice a highest spatial frequency within content contained by the corresponding

segment of the analog video signal is old and well known in the art. Therefore, the Official Notice is taken. Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to incorporate the old and well known of selecting the rate for each segment of the analog video signal sampling is at least twice a highest spatial frequency within content contained by the corresponding segment of the analog video signal into Page's system in order to increase the quality of the video signal because sampling the video signal using at least twice a highest spatial frequency will reduce interference.

Claim 13 is rejected for the same reason as discussed in claim 6.

Claim 20 is rejected for the same reason as discussed in claim 6.

#### ***Allowable Subject Matter***

8. Claims 3, 5, 10, 12, 17 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The dependent claims 3, 10 and 17 identifies the uniquely distinct features: "a plurality of analog-to-digital converters each coupled to one of the plurality of analog filters and having settings based upon the corresponding analog filter, each analog-to-digital converter sampling an output of the corresponding analog filter; and combination logic selecting the output of one of the analog-to-digital converters for each segment of the analog video signal and combining the selected outputs". The closest prior art, E. C. Cherry et al. (US Patent No. 3,324,237), either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.



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The dependent claims 5, 12 and 19 identifies the uniquely distinct features:

"wherein the sampling mechanism further comprises: a second analog-to-digital converter receiving the analog video signal and sampling the analog video signal at a variable rate; and a signal analysis unit analyzing samples from the first converter to select a sampling rate for each segment the analog video signal and adjusting the sampling rate of the second converter". The closest prior art, E. C. Cherry et al. (US Patent No. 3,324,237), either singularly or in combination, fail to anticipate or render the above underlined limitations obvious.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Trang U. Tran whose telephone number is (571) 272-7358. The examiner can normally be reached on 8:00 AM - 5:30 PM, Monday to Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David L. Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

November 16, 2006



Trang U. Tran  
Primary Examiner  
Art Unit 2622